# SEQUENCE LISTING

<110> Eck, Jurgen
Schmidt, Arno
Zinke, Holger

<120> Recombinant Fusion Proteins Based on Ribosome-Inactivating Proteins of the mistletoe Viscum album

<130> 09282-5

<140> Not Yet Assigned
<141> 1999-07-02

<150> PCT/EP98/00009
<151> 1998-01-02

<150> EP 97 10 0012.0
<151> 1997-01-02

<160> 38

<170> PatentIn Ver. 2.0

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Ser Phe Ser Asn Glu Ile Pro Leu Leu Arg Gln Ser Thr Ile Pro Val
         35                  40                  45

Ser Asp Ala Gln Arg Phe Val Leu Val Glu Leu Thr Asn Gln Gly Gly
     50                  55                  60

Asp Ser Ile Thr Ala Ala Ile Asp Val Thr Asn Leu Tyr Val Val Ala
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Tyr Gln Ala Gly Asp Gln Ser Tyr Phe Leu Arg Asp Ala Pro Arg Gly
                 85                  90                  95

Ala Glu Thr His Leu Phe Thr Gly Thr Thr Arg Ser Ser Leu Pro Phe
            100                 105                 110

Asn Gly Ser Tyr Pro Asp Leu Glu Arg Tyr Ala Gly His Arg Asp Gln
        115                 120                 125

Ile Pro Leu Gly Ile Asp Gln Leu Ile Gln Ser Val Thr Ala Leu Arg
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Phe Pro Gly Gly Ser Thr Arg Thr Gln Ala Arg Ser Ile Leu Ile Leu
145                 150                 155                 160

Ile Gln Met Ile Ser Glu Ala Ala Arg Phe Asn Pro Ile Leu Trp Arg
                165                 170                 175

Ala Arg Gln Tyr Ile Asn Ser Gly Ala Ser Phe Leu Pro Asp Val Tyr
            180                 185                 190

Met Leu Glu Leu Glu Thr Ser Trp Gly Gln Gln Ser Thr Gln Val Gln
        195                 200                 205

His Ser Thr Asp Gly Val Phe Asn Asn Pro Ile Arg Leu Ala Ile Pro
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Pro Gly Asn Phe Val Thr Leu Thr Asn Val Arg Asp Val Ile Ala Ser
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Asn Gln Ile Gln Leu Trp Pro Ser Lys Ser Asn Asn Asp Pro Asn Gln
35 40 45

Leu Trp Thr Ile Lys Arg Asp Gly Thr Ile Arg Ser Asn Gly Ser Cys
50 55 60

Leu Thr Thr Tyr Gly Tyr Thr Ala Gly Val Tyr Val Met Ile Phe Asp
65 70 75 80

Cys Asn Thr Ala Val Arg Glu Ala Thr Leu Trp Gln Ile Trp Gly Asn
85 90 95

Gly Thr Ile Ile Asn Pro Arg Ser Asn Leu Val Leu Ala Ala Ser Ser
100 105 110

Gly Ile Lys Gly Thr Thr Leu Thr Val Gln Thr Leu Asp Tyr Thr Leu
115 120 125

Gly Gln Gly Trp Leu Ala Gly Asn Asp Thr Ala Pro Arg Glu Val Thr
130 135 140

Ile Tyr Gly Phe Arg Asp Leu Cys Met Glu Ser Asn Gly Gly Ser Val
145 150 155 160

Trp Val Glu Thr Cys Val Ser Ser Gln Lys Asn Gln Arg Trp Ala Leu
165 170 175

Tyr Gly Asp Gly Ser Ile Arg Pro Lys Gln Asn Gln Asp Gln Cys Leu
180 185 190

Thr Cys Gly Arg Asp Ser Val Ser Thr Val Ile Asn Ile Val Ser Cys
195 200 205

Ser Ala Gly Ser Ser Gly Gln Arg Trp Val Phe Thr Asn Glu Gly Ala
210 215 220

Ile Leu Asn Leu Lys Asn Gly Leu Ala Met Asp Val Ala Gln Ala Asn
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Gln Met Trp Leu Pro Val Pro Gly Gly Tyr His
260 265

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gatgttacat gt 72

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<213> Viscum album

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Ala

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<211> 756
<212> DNA
<213> Viscum album

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caggggggag actcgatcac ggccgccatc gacgttacca atctgtacgt cgtggcttac 240
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<210> 8
<211> 252
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<213> Viscum album

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35 40 45

Asp Ala Gln Arg Phe Val Leu Val Glu Leu Thr Asn Gln Gly Gly Asp
50 55 60

Ser Ile Thr Ala Ala Ile Asp Val Thr Asn Leu Tyr Val Val Ala Tyr

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 65                  70                  75                  80

Gln Ala Gly Asp Gln Ser Tyr Phe Leu Arg Asp Ala Pro Arg Gly Ala
                85                  90                  95

Glu Thr His Leu Phe Thr Gly Thr Thr Arg Ser Ser Leu Pro Phe Asn
            100                 105                 110

Gly Ser Tyr Pro Asp Leu Glu Arg Tyr Ala Gly His Arg Asp Gln Ile
        115                 120                 125

Pro Leu Gly Ile Asp Gln Leu Ile Gln Ser Val Thr Ala Leu Arg Phe
    130                 135                 140

Pro Gly Gly Ser Thr Arg Thr Gln Ala Arg Ser Ile Leu Ile Leu Ile
145                 150                 155                 160

Gln Met Ile Ser Glu Ala Ala Arg Phe Asn Pro Ile Leu Trp Arg Ala
                165                 170                 175

Arg Gln Tyr Ile Asn Ser Gly Ala Ser Phe Leu Pro Asp Val Tyr Met
            180                 185                 190

Leu Glu Leu Glu Thr Ser Trp Gly Gln Gln Ser Thr Gln Val Gln His
        195                 200                 205

Ser Thr Asp Gly Val Phe Asn Asn Pro Ile Arg Leu Ala Ile Pro Pro
    210                 215                 220

Gly Asn Phe Val Thr Leu Thr Asn Val Arg Asp Val Ile Ala Ser Leu
225                 230                 235                 240

Ala Ile Met Leu Phe Val Cys Gly Glu Arg Pro Ser
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aatgaagggg ccattttgaa tttaaagaat gggttggcca tggatgtggc gcaagcaaat 720
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<210> 10
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| Arg | Asn | Gly | Met | Cys | Val | Asp | Val | Arg | Asp | Asp | Asp | Phe | Arg | Asp | Gly |
| | | | 20 | | | | | 25 | | | | 30 | | | |
| Asn | Gln | Ile | Gln | Leu | Trp | Pro | Ser | Lys | Ser | Asn | Asn | Asp | Pro | Asn | Gln |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Leu | Trp | Thr | Ile | Lys | Arg | Asp | Gly | Thr | Ile | Arg | Ser | Asn | Gly | Ser | Cys |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Leu | Thr | Thr | Tyr | Gly | Tyr | Thr | Ala | Gly | Val | Tyr | Val | Met | Ile | Phe | Asp |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Cys | Asn | Thr | Ala | Val | Arg | Glu | Ala | Thr | Leu | Trp | Gln | Ile | Trp | Gly | Asn |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Gly | Thr | Ile | Ile | Asn | Pro | Arg | Ser | Asn | Leu | Val | Leu | Ala | Ala | Ser | Ser |
| | | | 100 | | | | | 105 | | | | 110 | | | |
| Gly | Ile | Lys | Gly | Thr | Thr | Leu | Thr | Val | Gln | Thr | Leu | Asp | Tyr | Thr | Leu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Gly | Gln | Gly | Trp | Leu | Ala | Gly | Asn | Asp | Thr | Ala | Pro | Arg | Glu | Val | Thr |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Ile | Tyr | Gly | Phe | Arg | Asp | Leu | Cys | Met | Glu | Ser | Asn | Gly | Gly | Ser | Val |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Trp | Val | Glu | Thr | Cys | Val | Ser | Ser | Gln | Lys | Asn | Gln | Arg | Trp | Ala | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |

Tyr Gly Asp Gly Ser Ile Arg Pro Lys Gln Asn Gln Asp Gln Cys Leu
180 185 190

Thr Cys Gly Arg Asp Ser Val Ser Thr Val Ile Asn Ile Val Ser Cys
195 200 205

Ser Ala Gly Ser Ser Gly Gln Arg Trp Val Phe Thr Asn Glu Gly Ala
210 215 220

Ile Leu Asn Leu Lys Asn Gly Leu Ala Met Asp Val Ala Gln Ala Asn
225 230 235 240

Pro Lys Leu Arg Arg Ile Ile Ile Tyr Pro Ala Thr Gly Lys Pro Asn
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Gln Met Trp Leu Pro Val Pro
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<210> 11
<211> 48
<212> DNA
<213> Viscum album

<400> 11
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<210> 12
<211> 16
<212> PRT
<213> Viscum album

<400> 12
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1 5 10 15

<210> 13
<211> 94
<212> DNA
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<220>
<223> Description of Artificial Sequence:Synthetic gene
encoding amino acids 53-78 of human P2 protein

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ggtcaggaat tcgaagaaac caccgctgac aact 94

<210> 14
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Amino acids
53-78 of human P2 protein

<400> 14
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1 5 10 15

Gln Glu Phe Glu Glu Thr Thr Ala Asp Asn
20 25

<210> 15
<211> 75
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence:Fig. 20:
Synthetic linker cassette for providing modularity
at the 3' end of rMLB delta 1alpha 1beta

<400> 15
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gtaaggatcc ctcga 75

<210> 16
<211> 12
<212> PRT
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<220>
<223> Description of Artificial Sequence:Fig. 20: amino
acid sequence encoded by portion of SEQ ID NO: 15

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<210> 17

<211> 82
<212> DNA
<213> Artificial S quence

<220>
<223> Description of Artificial Sequence:Fig. 21:
Synthetic linker cassette for providing modularity
at the 3'end of rMLB Delta 1alpha 1beta 2gamma
with affinity module ("His-Tag").

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<210> 18
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Amino acid
sequence encoded by a portion of SEQ ID NO: 17

<400> 18
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1 5 10 15

His His His His His
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<210> 19
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
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<210> 20
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Fig. 22:
Mutagenic oligonucleotides for inactivating
carbohydrate binding sites in rMLB. - 1alpha2
(W38A). -

<400> 20
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<210> 21
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Fig. 22:
Mutagenic oligonucleotides for inactivating
carbohydrate binding sites in rMLB. - 1beta (Y68S,
Y70S, Y75S, F79S). -

<400> 21
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c 61

<210> 22
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Fig. 22:
Mutagenic oligonucleotides for inactivating
carbohydrate binding sites in rMLB. - 1beta1
(D235A). -

<400> 22
gggttggcca tggctgtggc gcaagc 26

<210> 23
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Fig. 22
Mutagenic oligonucleotides for inactivating
carbohydrat binding sites in rMLB. - 2gamma2
(Y249A). -

<400> 23
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<210> 24
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Fig. 22:
Mutagenic oligonucleotides for inactivating carbohydrate binding sites in rMLB. - pT7 EcoRV to SspI. -

<400> 24
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<210> 25
<211> 35
<212> DNA
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<220>
<223> Description of Artificial Sequence:Fig. 22:
Mutagenic oligonucleotides for inactivating carbohydrate binding sites in rMLB. - pT7 SspI to EcoRV. -

<400> 25
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<210> 26
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Fig. 23:
Mutagenic oligonucleotides for constructing modular ITF gene cassettes. - pT7 Delta NdeI to StuI. -

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<210> 27
<211> 33

<212> DNA
<213> Artificial S quence

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Mutagenic oligonucleotides for constructing
modular ITF gene cassettes. - rMLB silent NheI. -

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<210> 28
<211> 32
<212> DNA
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<220>
<223> Description of Artificial Sequence:Fig. 23:
Mutagenic oligonucleotides for constructing
modular ITF gene cassettes. - rMLA Delta AgeI. -

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<210> 29
<211> 40
<212> DNA
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Mutagenic oligonucleotides for constructing
modular ITF gene cassettes.

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<210> 30
<211> 43
<212> DNA
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<220>
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Mutagenic oligonucleotides for constructing
modular ITF gene cassettes. - rMLB Delta EcoNI to
AgeI. -

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<210> 31
<211> 11
<212> DNA
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<220>
<223> Description of Artificial Sequence:Flanking region of the ProML gene cassette in expression vector pT7ProML

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<210> 32
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<223> Description of Artificial Sequence:Flanking region of the ProML gene cassette in expression vector pT7ProML

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<210> 33
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<212> DNA
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<220>
<223> Description of Artificial Sequence:Flanking region of the IML gene cassette in expression vector PIML-02-P

<400> 33
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<210> 34
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<223> Description of Artificial Sequence:Flanking region
of the IML gene cassette in expression vector
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<400> 34
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<210> 35
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module peptide

<400> 35
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<210> 36
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Modulator
module peptide

<400> 36
His Asp Glu Leu
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<210> 37
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Portion of the
ML propeptide

<400> 37
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1 5 10 15

Ala

<210> 38
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:A degradation product of myelin basic protein.

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